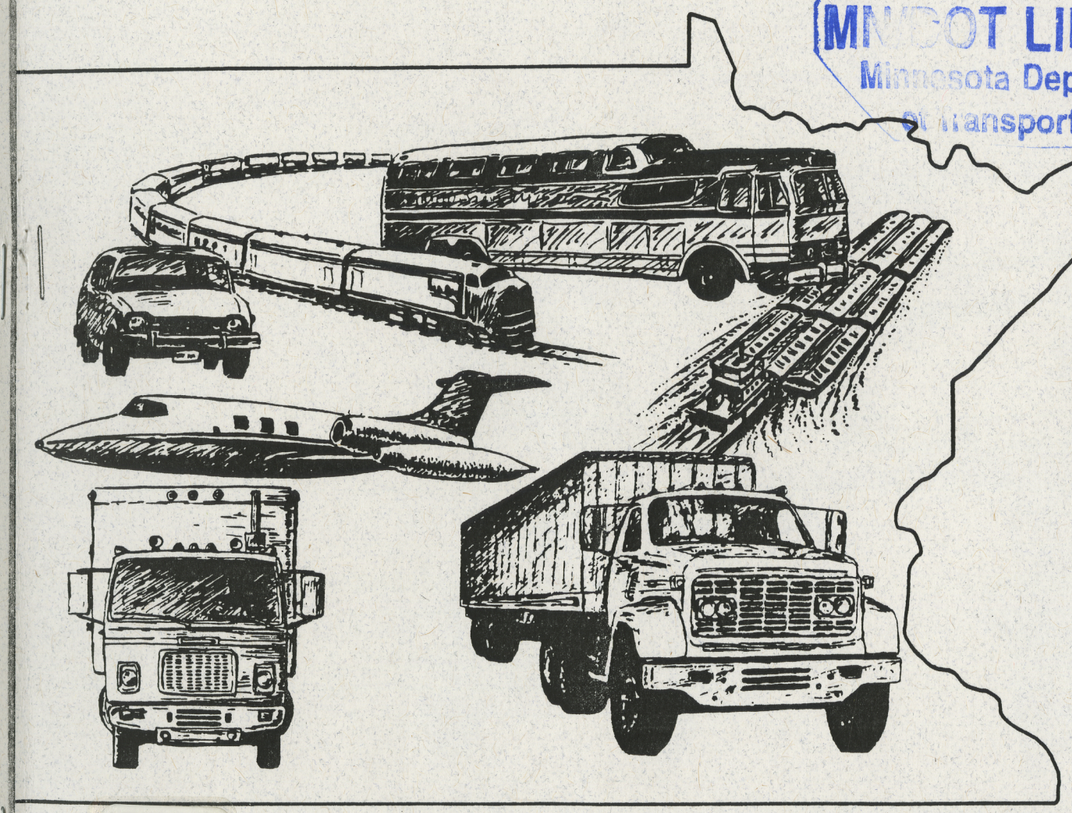
Transportation Analysis

TA-M393

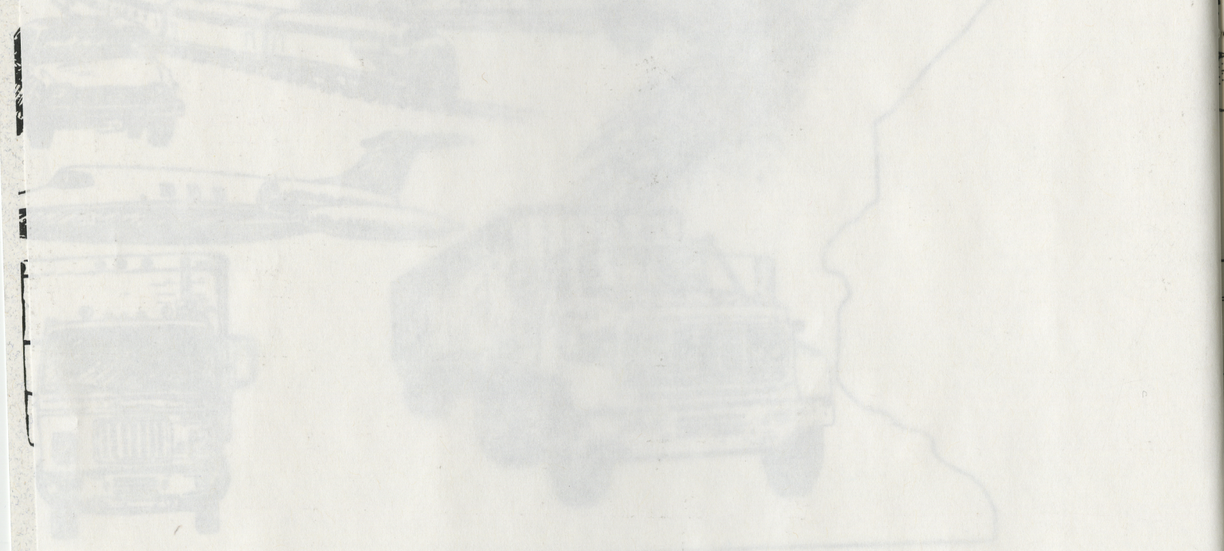
TH 52 FROM ROBERT TO CSAH42

SP 1928-55



PREPARED BY
THE MINNESOTA DEPARTMENT OF TRANSPORTATION
PROGRAM MANAGEMENT DIVISION
TRAFFIC FORECASTS SECTION

Transportation Analysis



PREPARED BY
THE MINNESOTA DEPARTMENT OF TRANSPORTATION
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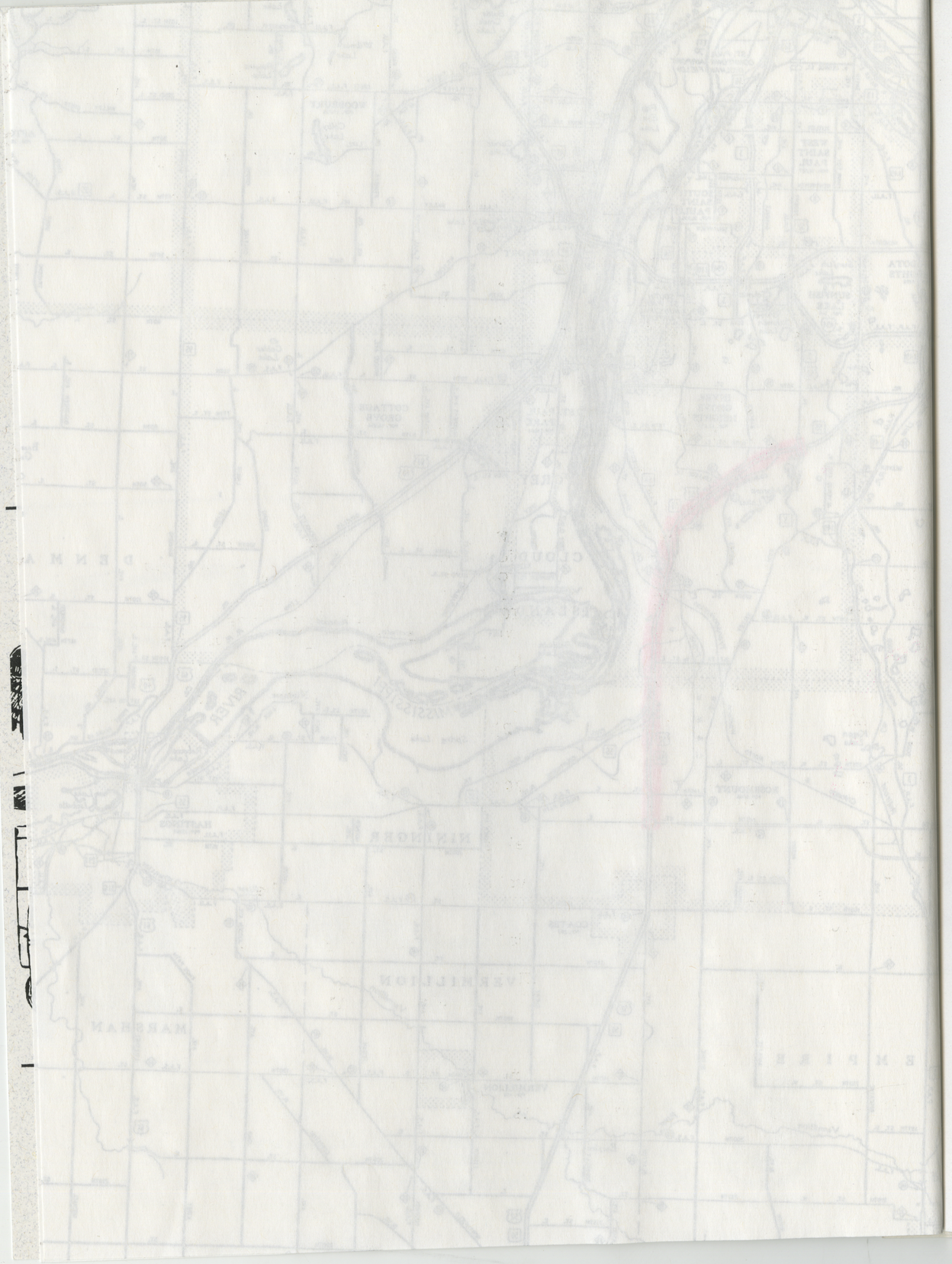


STATE OF MINNESOTA

DEPARTMENT OF TRANSPORTATION — OFFICE MEMORANDUM

To: LARRY ERB
TRAFFIC FORECAST MANAGER
METRO DISTRICT

Date: 11/26/91

From: GEORGE M. CEPRESS P.E.
STATE TRAFFIC FORECAST ENGINEER
ROOM 820 CENTRAL OFFICE

Phone: 296-0217

Subject: TA-M393
TH 52 FROM ROBERT ST. TO CSAH 42 (DAKOTA COUNTY)
SP# 1928-55

Estimated Average Weekday Traffic (AWDT) and Peak Hour (AM and PM) volumes are presented in schematic form for the year 2010 on Figures (1-9). Figures (1,2) contain base volumes for the year 2010 (2010F/4A3) for TH 52 from Robert St. to Concord St. Figures (3,4) delineate the Rottlund Development IGH Resort Community trips to be added to the 2010 base volumes in order to obtain total 2010 volumes Figures (5-9). In addition, Figures (1-6) portray 2010 loadings on 80th St. from Robert St. to the TH 3 Freeway. The proposed Rottlund Development IGH Resort Community (RD) site is depicted on Figure 10.

The volumes presented on Figures (1,2), (2010 Base) were developed from the following data sources:

1) Computer traffic assignments of 2010 and 1988 volumes to the year 2000 road network (2010F/4A3 and 1988B/4A3).

2) Loaded link and loaded tree (zone) analysis.

3) Current (1990) and historic ADT volumes on TH 52 and the cross streets taken by Mn/DOT.

4) Raw counts supplied by Metro-Oakdale District at the following locations;
   a) All ramps and loops at the TH 52/Robert St. interchange.
   b) Mainline counts on TH 52 west of Babcock Trail and north of Concord St.
   c) Concord St. north of TH 52.

5) Field trip to the area to assess future growth potential.

6) Analysis of aerial photographs (1990).

The volumes presented on Figures (3,4) (RD Trips To Be Added To 2010 BASE) were developed as follows:

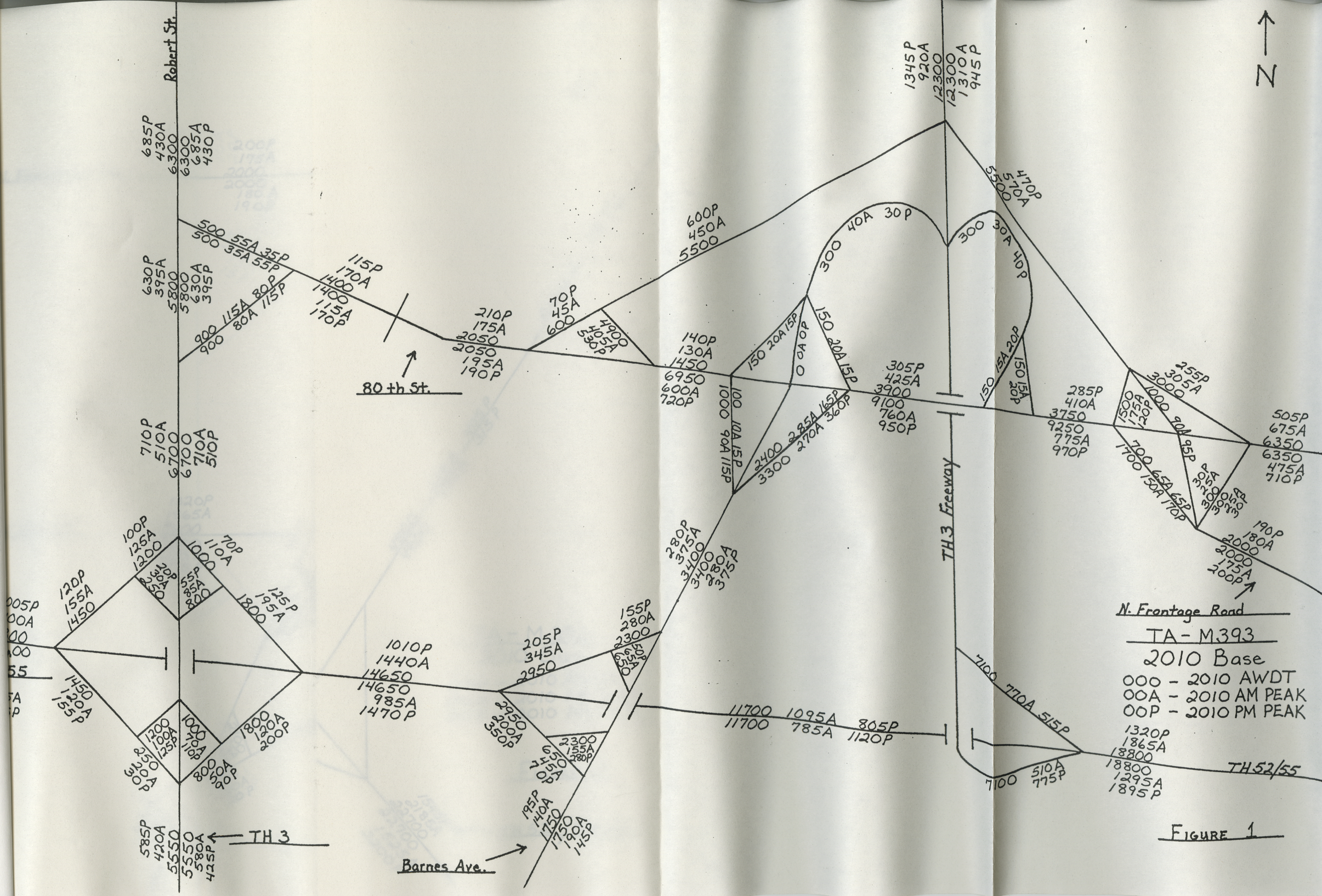
1) Trip generation figures for RD were determined as shown in Figure 11.

2) Trip generation figures for the RD trips to be added (Figures 3,4) to the 2010 base (Figures 1,2) are also shown in Figure 11.

3) The direction of approach for these added trips was determined by analysis of loaded tree (zone) 601 which contains the Rottlund Development. The results of this analysis are depicted on Figure (3,4).

The volumes presented on Figures (5,6) (2010 Total Trips) were reached by adding the volumes shown on Figures (1,2) to those shown on Figures (3,4). The volumes presented on Figures (5-9) represent total 2010 volumes on the subject route given the development assumptions presented in this report.

Please refer any further questions on this report to Tom Nelson at 297-1194 or Jim Page at 296-1626.

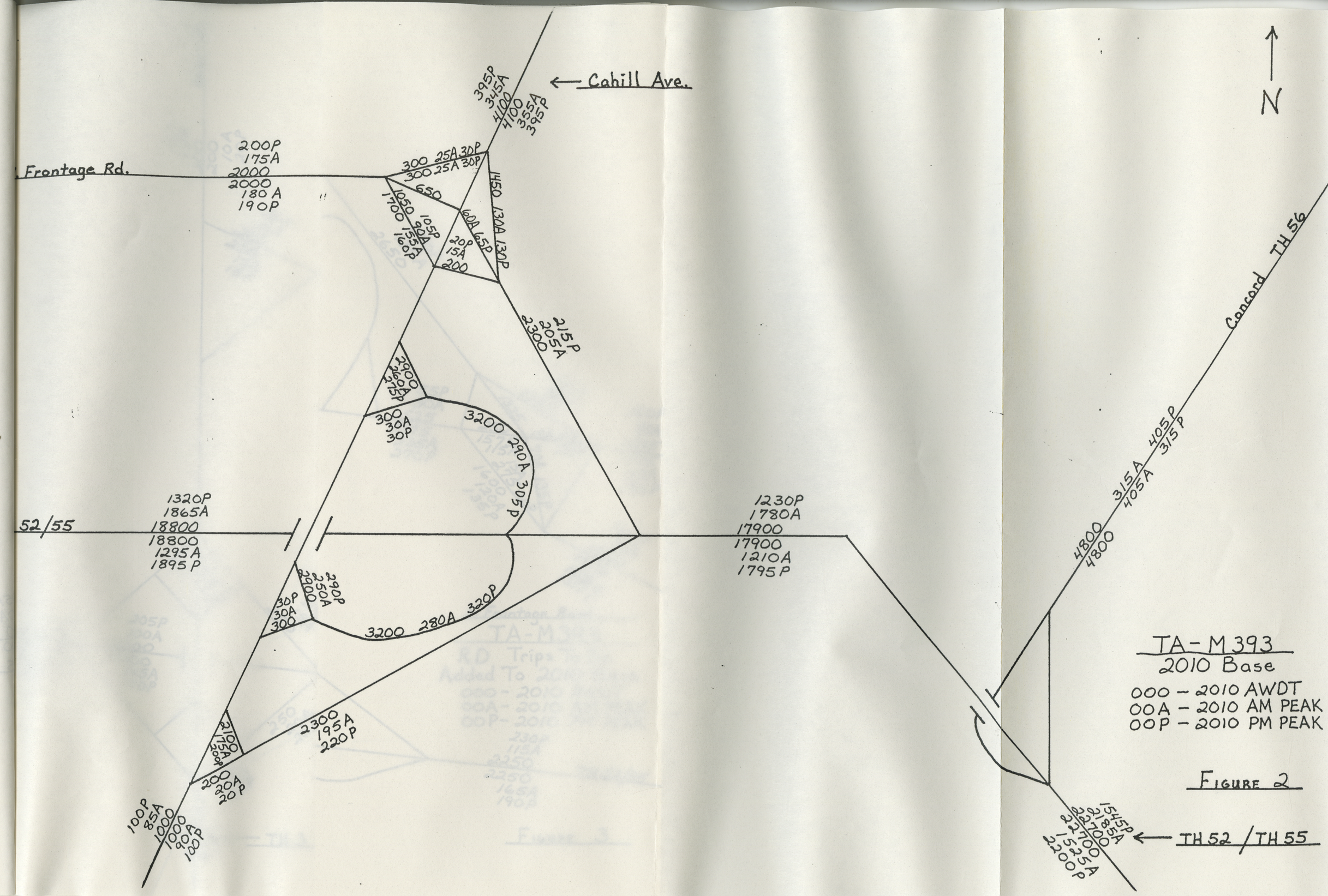


TA - M393

2010 Base

000 - 2010 AWDT
00A - 2010 AM PEAK
00P - 2010 PM PEAK

FIGURE 1


N
← Cahill Ave.
Frontage Rd.
52/55
Concord TH 56
← TH 52 / TH 55
395P
345A
4100
4100
355A
395P
200P
175A
2000
2000
180A
190P
300 25A 30P
300 25A 30P
650
1450 130A 130P
1050
1700 155A
160P
105P
90A
60A 65P
20P
15A
200
215P
205A
2300
2900
260A
275P
300
30A
30P
3200 290A 305P
1320P
1865A
18800
18800
1295A
1895P
290P
250A
2900
30P
30A
300
3200 280A 320P
1230P
1780A
17900
17900
1210A
1795P
2100
175A
200
2300
195A
220P
200
20A
20P
100P
85A
1000
1000
90A
100P
315A
405A
4800
4800
405P
315P
1545P
2185A
22700
22700
1525A
2200P
TA-M393
2010 Base
000 – 2010 AWDT
00A – 2010 AM PEAK
00P – 2010 PM PEAK
FIGURE 2

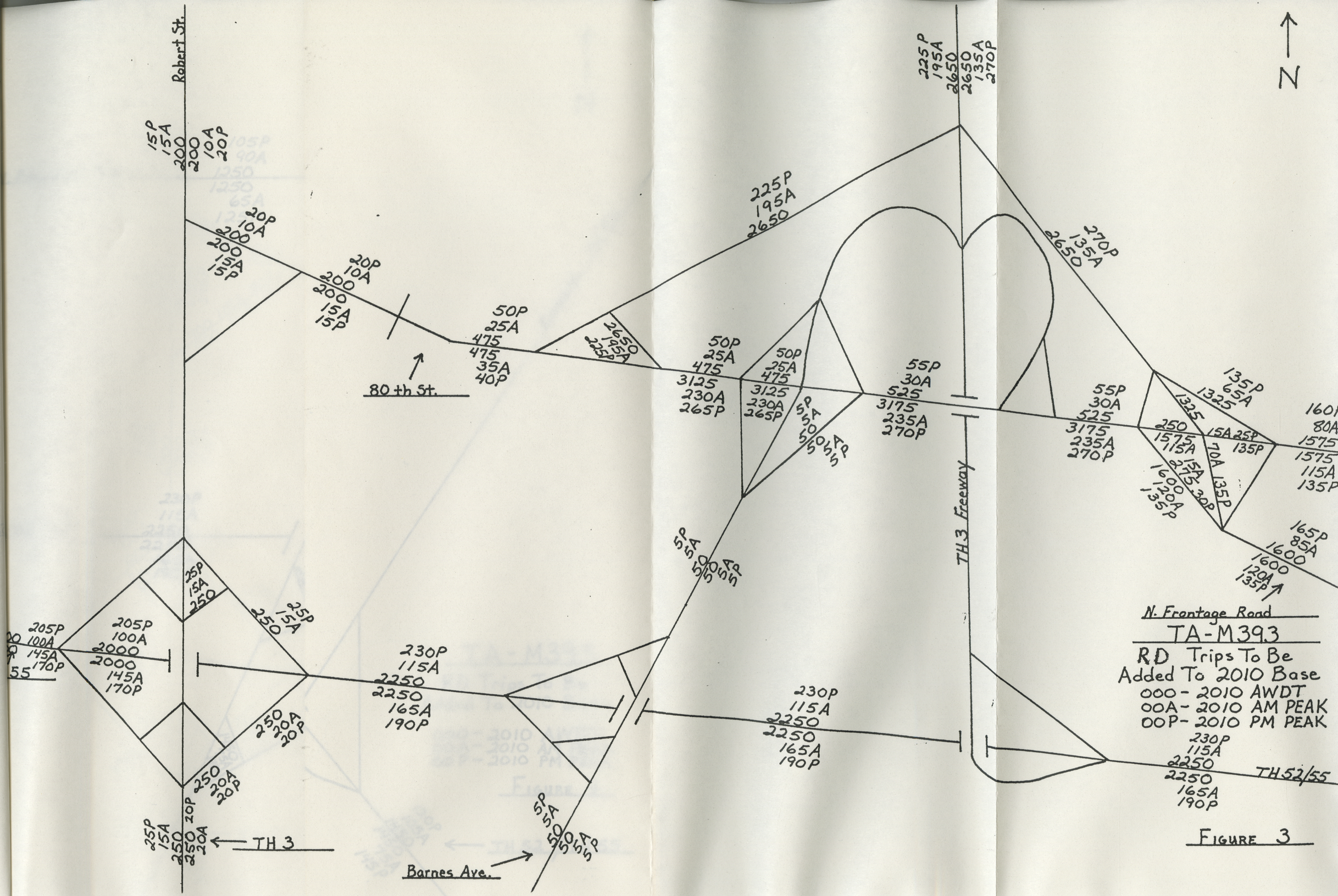
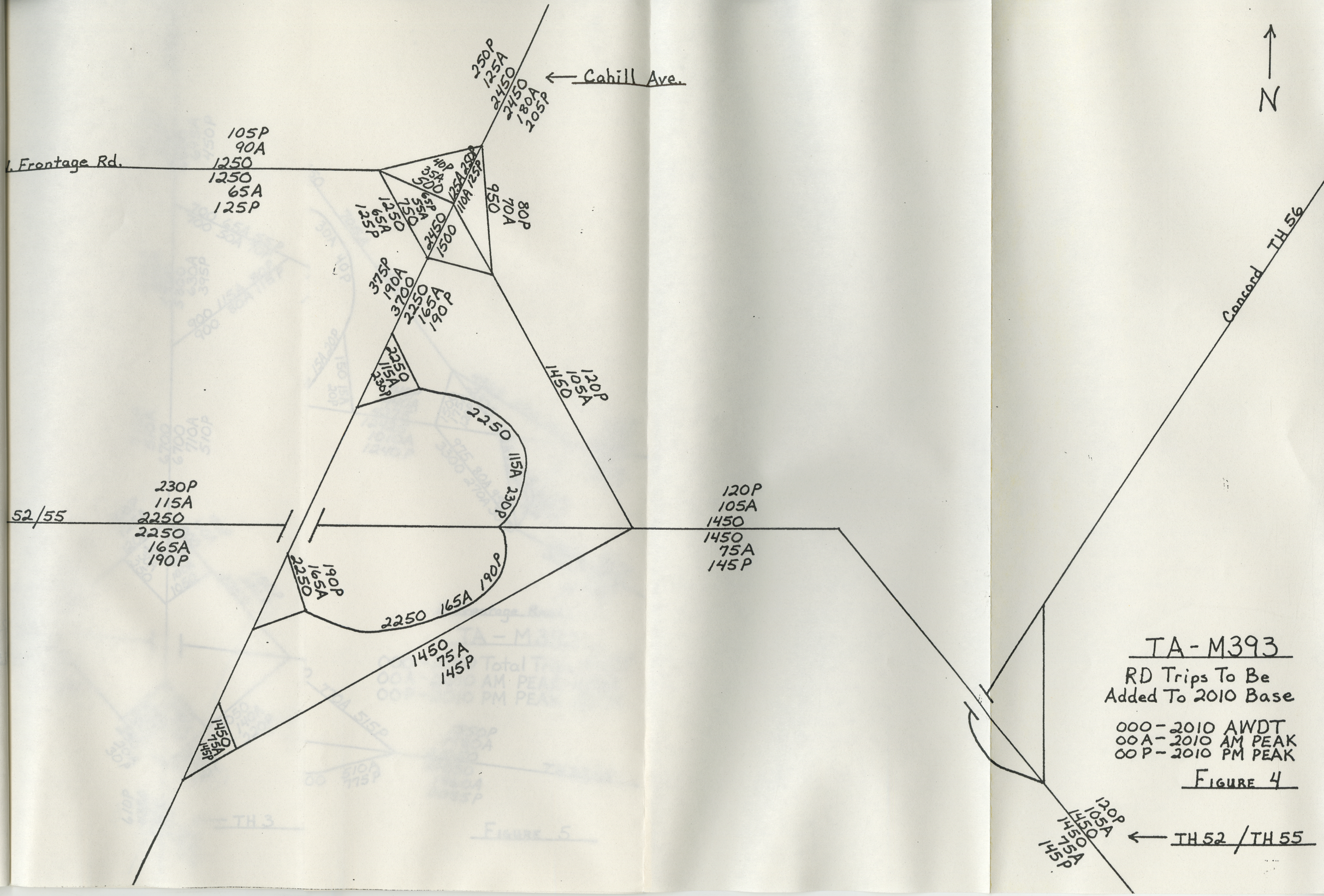

Robert St.
15P
15A
200
200
10A
20P
20P
10A
200
200
15A
15P
20P
10A
200
200
15A
15P
80 th St.
50P
25A
475
475
35A
40P
2650
195A
225P
225P
195A
2650
50P
25A
475
3125
230A
265P
50P
25A
475
3125
230A
265P
5P
5A
50
50
5A
5P
55P
30A
525
3175
235A
270P
225P
195A
2650
2650
135A
270P
270P
135A
2650
55P
30A
525
3175
235A
270P
135P
65A
1325
1325
250
1575
115A
15A
25P
135P
70A
135P
15A
275
30P
1600
120A
135P
1601
80A
1575
1575
115A
135P
165P
85A
1600
1600
120A
135P
N
TH 3 Freeway
205P
100A
2000
2000
145A
170P
205P
100A
145A
170P
55
35P
15A
250
25P
15A
250
250
20A
20P
250
20A
20P
230P
115A
2250
2250
165A
190P
230P
115A
2250
2250
165A
190P
25P
15A
250
250
20A
20P
TH 3
5P
5A
50
50
5A
5P
Barnes Ave.
N. Frontage Road
TA-M393
RD Trips To Be
Added To 2010 Base
000 - 2010 AWDT
00A - 2010 AM PEAK
00P - 2010 PM PEAK
230P
115A
2250
2250
165A
190P
TH 52/55

FIGURE 3

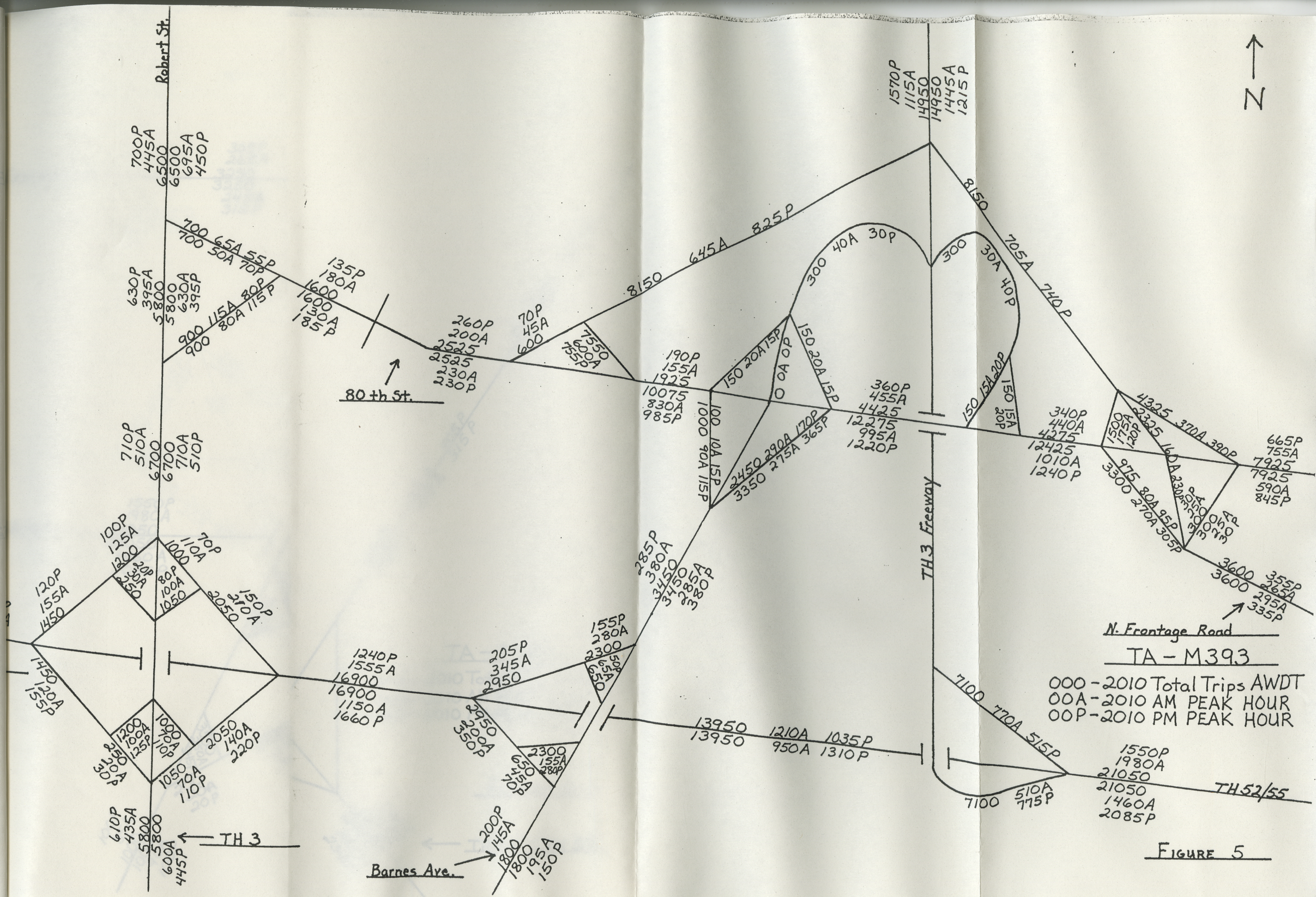


TA-M393

RD Trips To Be
Added To 2010 Base

000 - 2010 AWDT
00A - 2010 AM PEAK
00P - 2010 PM PEAK

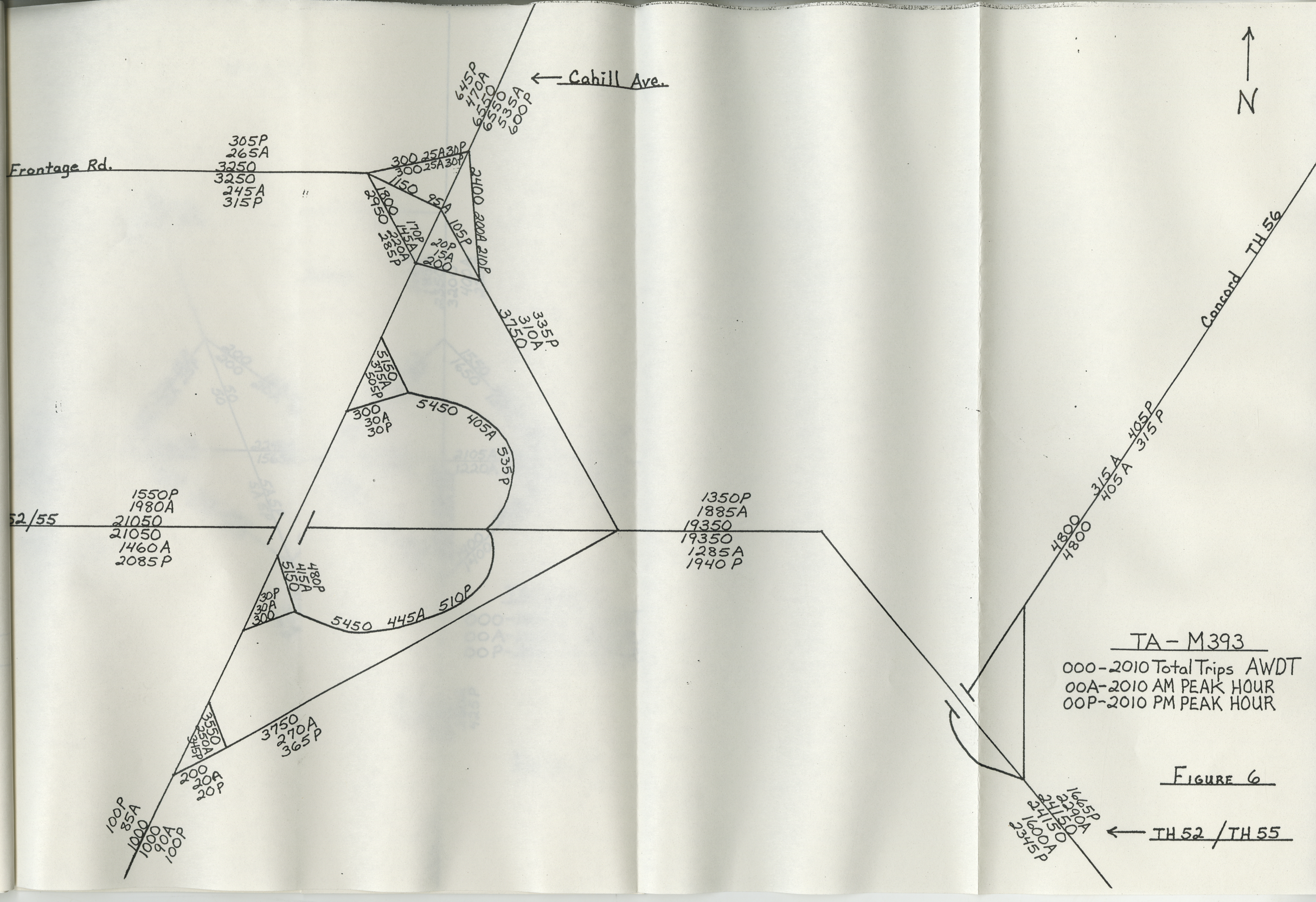
FIGURE 4



TA - M393

000 - 2010 Total Trips AWDT
00A - 2010 AM PEAK HOUR
00P - 2010 PM PEAK HOUR

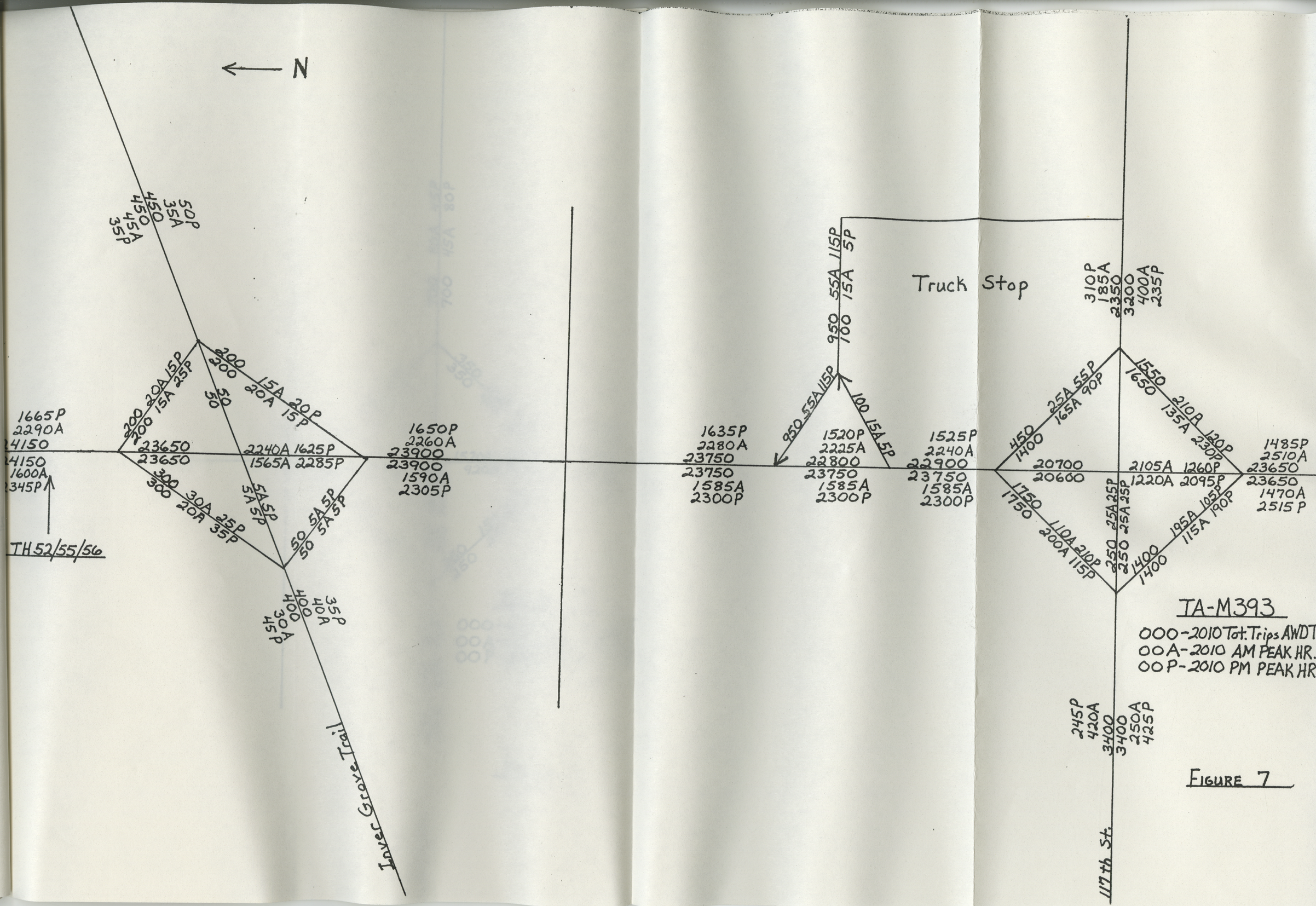
FIGURE 5



TA – M393

000 – 2010 Total Trips AWDT
00A – 2010 AM PEAK HOUR
00P – 2010 PM PEAK HOUR

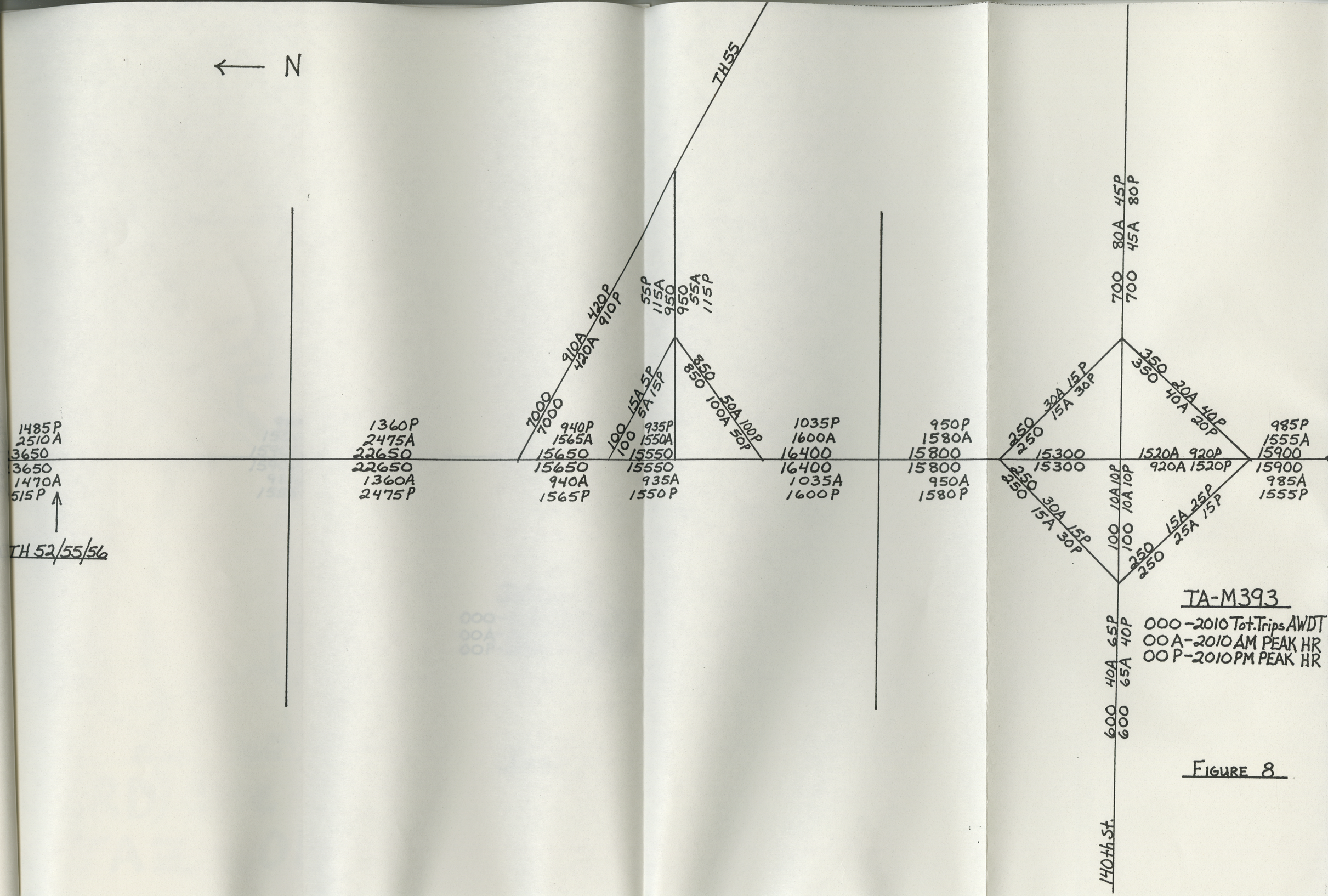
FIGURE 6



JA-M393

000-2010 Tot. Trips AWDT
00A-2010 AM PEAK HR.
00P-2010 PM PEAK HR

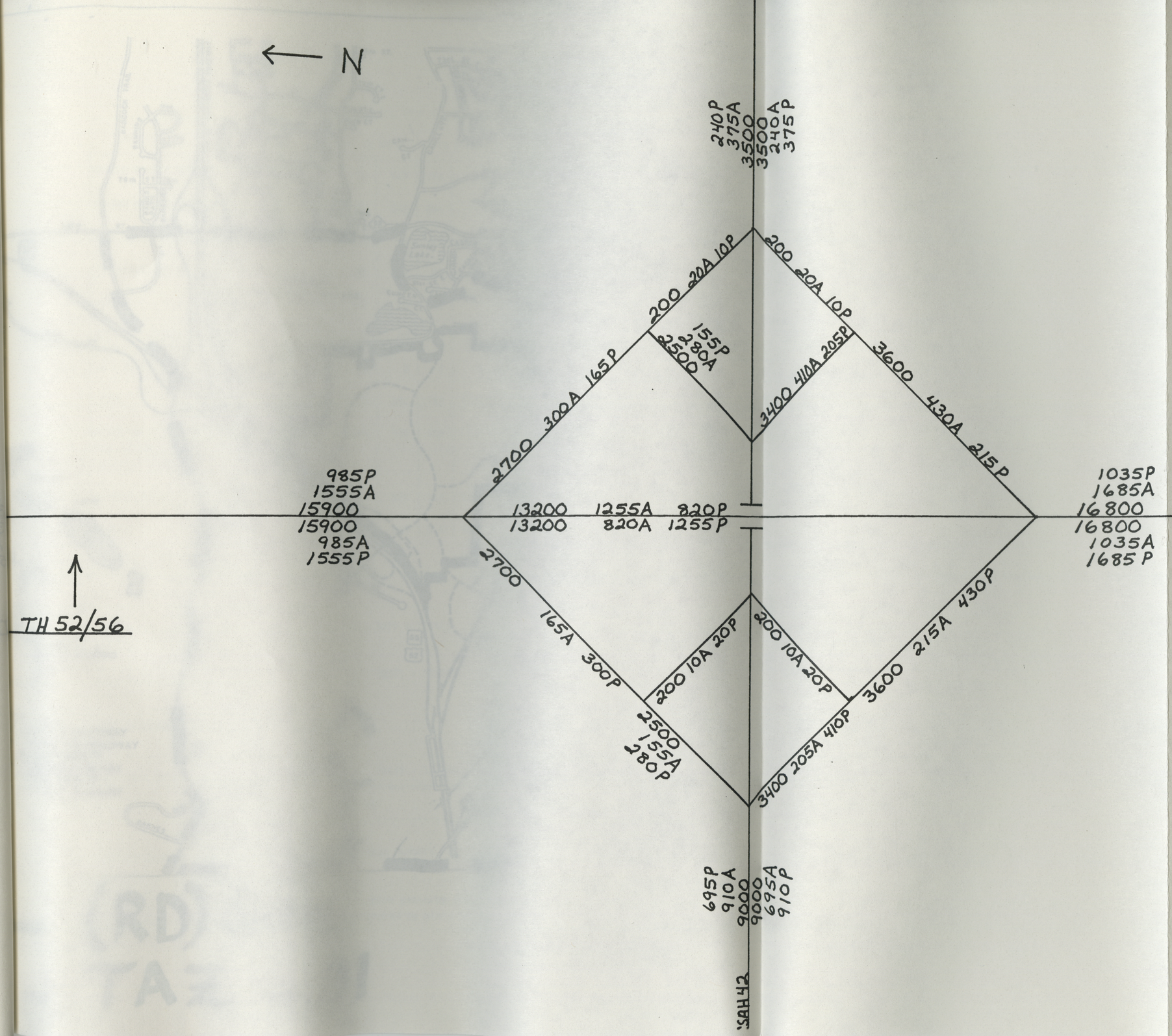
FIGURE 7



TA-M393

000 – 2010 Tot. Trips AWDT
00A – 2010 AM PEAK HR
00P – 2010 PM PEAK HR

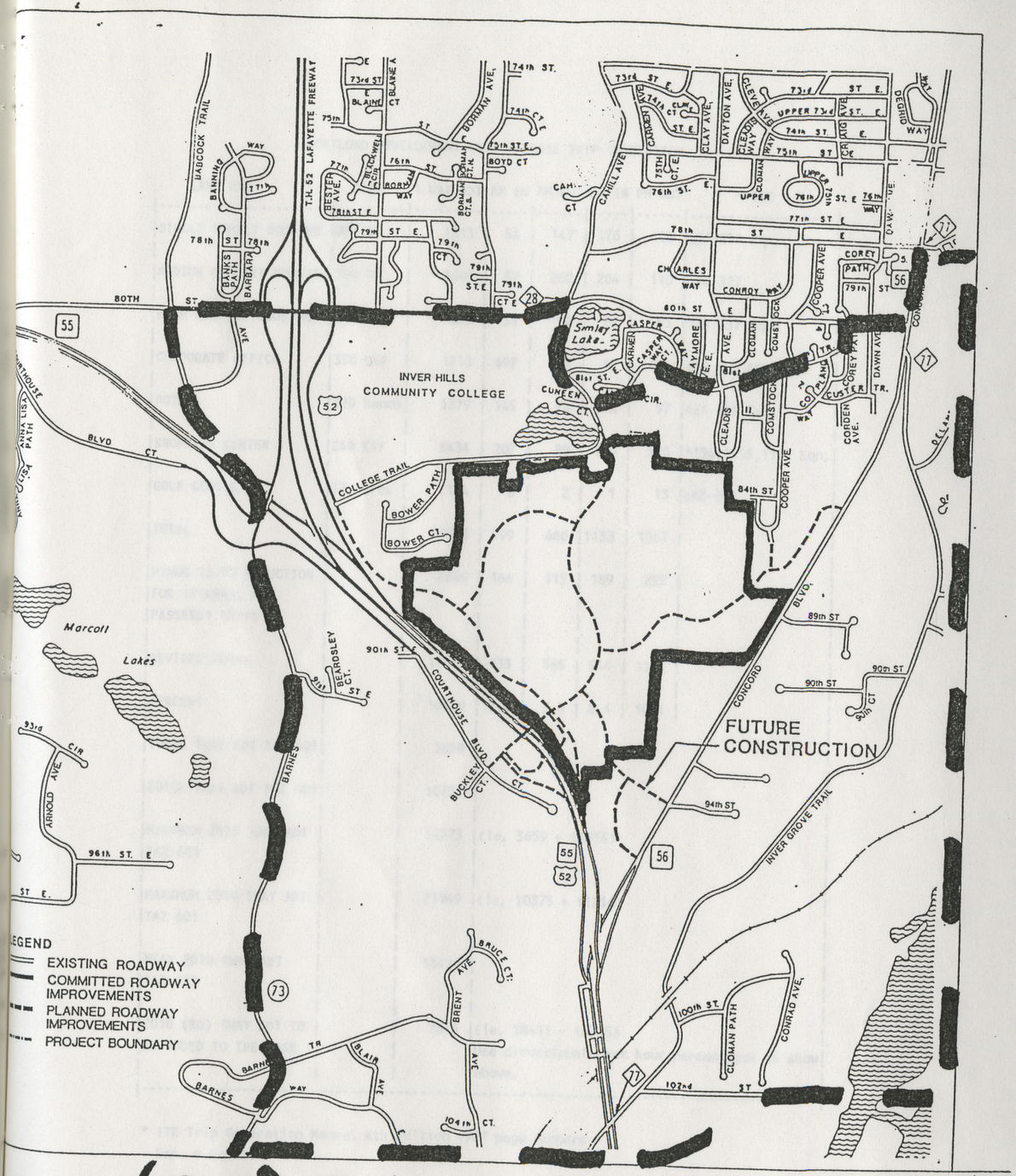
FIGURE 8



TA-M393

000 - 2010 Tot. Trips AWDT
00A - 2010 AM PEAK HR
00P - 2010 PM PEAK HR

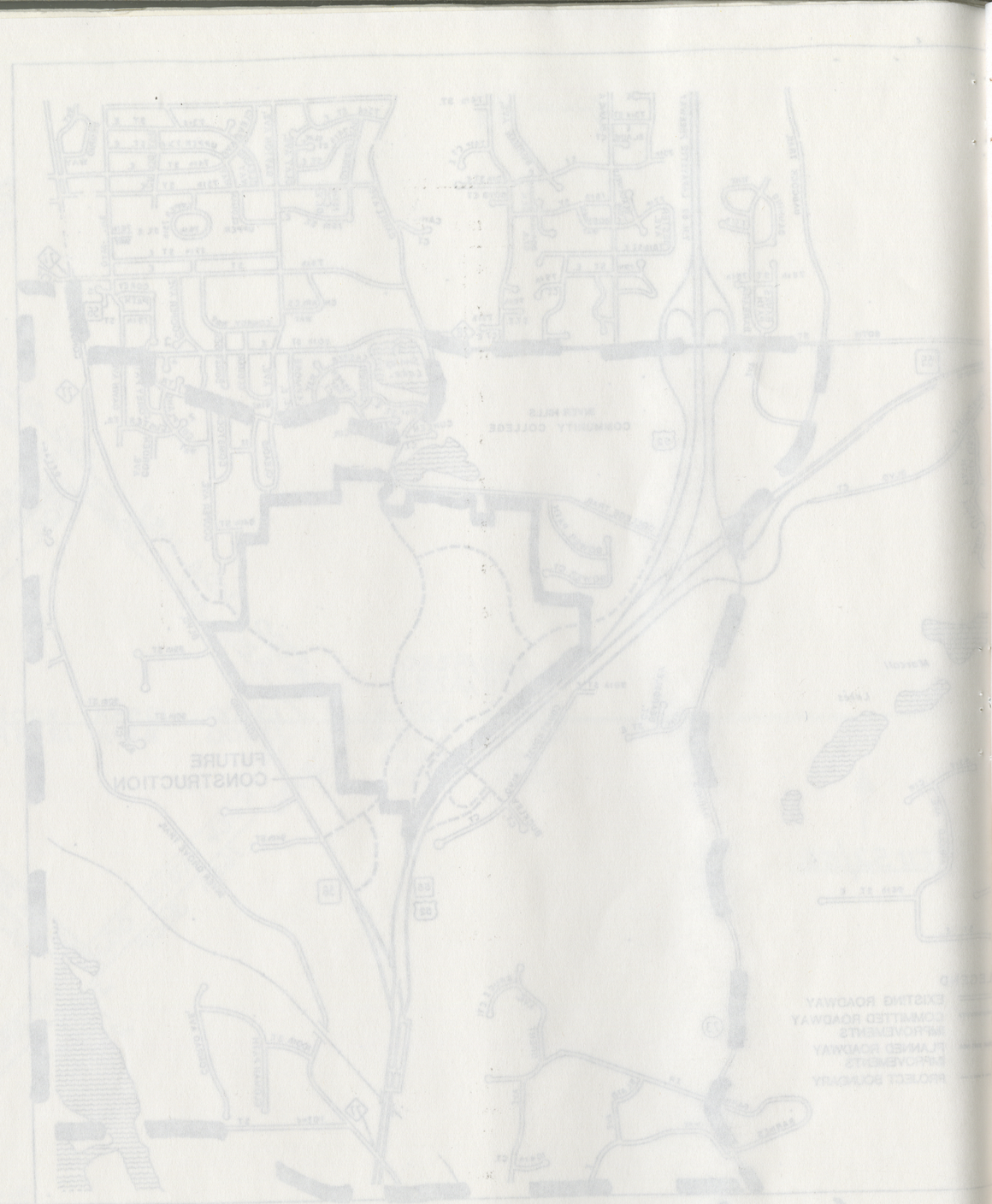
FIGURE 9



(RD) Site

TAZ 601

FIGURE 10



ROTTLUND DEVELOPMENT (RD) - TOTAL TRIP GENERATION

LAND USE	SIZE	1 WAY ADT	AM IN	AM OUT	PM IN	PM OUT	* ITE
SINGLE FAMILY HOUSING	273 DU	1313	54	147	176	103	257-259 Eqn.
MEDIUM DENSITY HOUSING	500 DU	1649	57	202	204	110	326-327
HIGH DENSITY HOUSING	370 DU	825	31	92	82	55	335-337 Eqn.
CORPORATE OFFICE	338 KSF	1710	497	74	87	454	888,890,892 Eqn.
HOTEL	320 Rooms	1379	145	74	113	97	466-468 Eqn.
SHOPPING CENTER	240 KSF	6434	207	89	470	530	1154,1155,1157 Eqn.
GOLF COURSE	37 Acres	154	8	2	1	13	643-644
TOTAL		13463	999	680	1133	1362	
MINUS 16.7% REDUCTION FOR INTERNAL AND PASSERBY TRIPS **		2249	166	115	189	227	
REVISED TOTAL		11214	833	565	944	1135	
PERCENT		100.0	7.4	5.0	8.4	10.1	
1988B 1WAY ADT TAZ 601		3659					
2010F 1WAY ADT TAZ 601		10735					
MINIMUM 2010 1WAY ADT TAZ 601		14873	(ie. 3659 + 11214)				
MAXIMUM 2010 1WAY ADT TAZ 601		21949	(ie. 10375 + 11214)				
MEAN 2010 1WAY ADT TAZ 601		18411					
2010 (RD) 1WAY ADT TO BE ADDED TO THE BASE		7675	(ie. 18411 - 10735) Use directional peak hour percentages as show above.				

* ITE Trip Generation Manual 4th Edition 1987 page numbers.
  Eqn. = Equation

** The ITE Manual states that typical internal plus passerby trip making may amount to 20-30% of the total trips generated by mixed use developments such as (RD), we used 16.7%.

FIGURE 11